

## GBM Observations of Terrestrial Gamma-Ray Flashes

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The TGF detection rate of Gamma-ray Burst Monitor (GBM) has been increased twice since launch. The most recent improvement is from a new operating mode in which data for individual photons are down-linked for selected portions of the orbit, enabling a more sensitive ground-based search for TGFs. The new search has increased the TGF detection rate and is finding TGFs more than five times fainter than the TGFs of the previous GBM sample. We summarize the properties of the original GBM TGF sample and compare to the less intense TGFs now being detected. In addition to gamma-ray TGFs, GBM is observing distant TGFs from the propagation of charged particles along geomagnetic field lines. Strong 511 keV annihilation lines have been observed, demonstrating that both electrons and positrons are present in the particle beams. Spectral fits to these electron/positron TGFs will be shown.

